

Reconfigurable FPGA Computing

Board	Multicores	FPGA	Memory
EVP6472	12 C64x+	Virtex-5	DDR2

Digitizers

Board	Sampling	Resolution	A/D Channels
EVP6472-391	1GSPS	8-bit	Dual
EVP6472-390	210MSPS	12-bit	Dual
EVP6472-941	250MSPS	14-bit	Quad
EVP6472-980	125MSPS	14-bit	Octal
EVP6472-384	125MSPS	14-bit	Quad

Arbitrary Waveform Generators

Board	Sampling	Resolution	D/A Channels
EVP6472-381	1GSPS	14-bit	Dual
EVP6472-942	800MSPS	16-bit	Quad

Data Acquisition (ADC & DAC)

Board	Sampling	A/D	Sampling	D/A Channels
EVP6472-943	250MSPS	14-bit	800MSPS	16-bit Dual
EVP6472-350	125MSPS	14-bit	500MSPS	16-bit Dual
EVP6472-959	40MHz	12-bit	125MSPS	14-bit Quad
EVP6472-946	600kHz	16-bit	2MSPS	16-bit Quad

Clock and Signal Generator

Board	Features
EVP6472-399	Dual 400MSPS DDS, Ext. Clock

RF Front-ends

Board	Features	RF band	Resolution	Channels
EVP6472-901	MIMO	2.4 & 5GHz	10-bit	Dual
EVP6472-911	LTE	2.4 & 5GHz	12-bit	Dual
EVP6472-903	WIMAX	2.4-2.7GHz	12-bit	Dual

Framegrabbers and Video Displays

Board	Features
EVP6472-909	16 PAL/NTSC analog inputs
EVP6472-939	DVI Transceiver
EVP6472-949	Dual Camera Link (base/medium/full)

Communications

Board	Features
EVP6472-945	Dual Gigabit Ethernet, SDRAM, Flash
EVP6472-922	RS-422 interface, LVTTTL I/Os

Sundance Multiprocessor Technology

- ● ● embedded signal processing solutions

**Embedded Hybrid Multi-Processors
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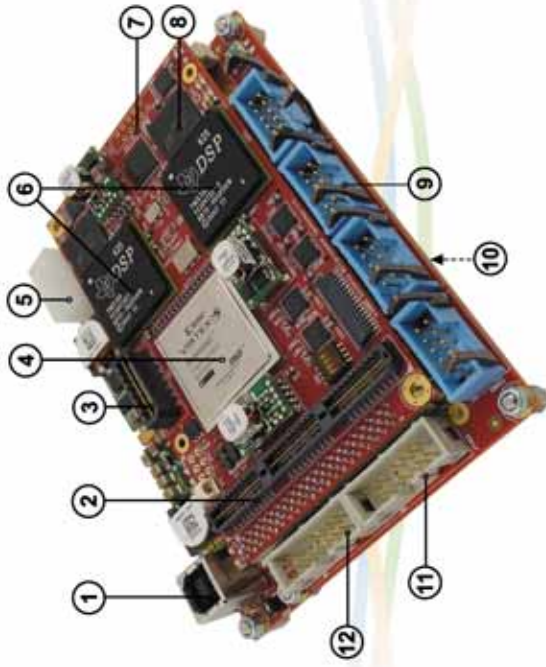
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- Embedded Processors
- Communications Infrastructures
- Automotive Systems
- Digital Video and Equipments
- Ultra-Low Power Wireless Handsets
- Industrial Control & Vision Solutions
- Test and Measurement Instruments

EVP6472, Heterogeneous Multiprocessor cores

●●● Performance scaling through parallel processing...



Dual TMS320C6472 DSP + Virtex-5 FPGA and embedded processing resources

1. USB (Flash programming and Host link)
2. SLB (4x 8-bit differential signals)
3. Rocket-IO Serial Link (4x 2.5Gbps)
4. Virtex-5 FXT FPGA (FF665)
5. External power connector (+12Vdc)
6. Two 500MHz multicore C6472 (6 cores per die)
7. 10/100/1000 Ethernet PHY + RJ45 header
8. DDR2 SDRAM (2 banks x 256MB)
9. Quad RS-232 serial communication ports
10. MicroSD Flash socket
11. DSP JTAG input connector
12. DSP JTAG output connector

Description

Sundance's EVP6472 is a multicore hybrid digital signal processor evaluation board packaged in a very small and compact form factor.

The multiprocessor architecture is built around two of Texas Instruments' TMS320C6472 multicore DSP devices, and one Xilinx FPGA coprocessor. Medium and large-size Virtex-5 FXT FPGA devices with built-in PowerPC 440 processor core can be chosen.

Twelve 500MHz C64x+ DSP CPU cores, and the reconfigurable FPGA are ring-interconnected via Serial RapidIO lanes. Multiple Rocket-I/O Serial Links can be used as high-speed data path between two or more evaluation boards. Each EVP6472 can also be interface to network systems or controllers via TCP/IP or UDP communication links using the on-board Gigabit Ethernet port.

Power supply is provided by a single external +12Vdc PSU. On-board Flash and MicroSD Flash socket are available to operate the EVM board in standalone mode.

The EVP6472 provides ultra-high performance and substantial efficient low-power and reduced cost for complex parallelized applications in military, aerospace, medical, instrumentation and industrial control systems.

Efficient 3GHz Multicore DSP 100% Code portability from C64x and C64x+

Advantages of the EVP6472 evaluation system

- Compact module size: 4.7"x3.5" (118.6mm x 90mm)
- Scalable property: Datapath via Rocket-IO serial links
- Rugged connectors: Reliable in harsh environments
- Mounting holes: Resistance to shock and vibration
- Fully compatible with PC: USB 2.0 for development
- Embedded environment: 12Vdc PSU, Flash, boxable

Features

Mechanical

- Standalone compact form factor
- Four-corner mounting holes
- Air-cooled board

Target devices

- Dual C6472 Multicore DSP (12 C64x+ CPU cores)
- Virtex-5: FX30T or FX70T (PowerPC 440)

Devices interconnection

- Ring of Serial RapidIO links

Configuration

- Download from USB 2.0 or Flash

Memory

- 512MB DDR2 SDRAM (256MB per DSP)
- 64MB Flash

On-board I/Os

- Rocket-IO Serial Link
- Sundance Local Bus (LVDS or LVTTL, 109 I/Os)
- JTAG connectors for debugging and simulation

Sundance Local Bus (SLB)

- FPGA mezzanine card interface with power supply
- Variety of functionalities:
 - ADC, DAC, Video and Communication interfaces
 - Open specifications

On-board connectors

- Four RS-232 Serial communication ports
- Gigabit Ethernet via RJ45 connector
- MicroSD Flash socket
- USB to allow easy software maintenance
- External power supply connector (+12Vdc)

Software support

- Board control and monitoring tools
- Flash programming utility
- Host side API and C++ software functions
- Software program example
- Complete DSP+FPGA codesign project
- 3L Diamond RTOS & FPGA codesign tool-suite
- Drivers for Windows, Linux or VxWorks